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ELECTRONIC DESK-TOP CALCULATORS FROM THE USSR, (U)
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FOREIGN TECHNOLOGY DIVISION



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by

K. Naeser



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By: K. Naeser

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ELECTRONIC DESK-TOP CALCULATORS FROM THE USSR

K. Naeser

A series of desk-top electronic calculators from the USSR with the type designation ISKRA is becoming known and some types from the series are to be exported to the GDR. The series begins with simple four-function calculators and goes on to programmable calculators with the possibility for connecting external input and output devices. Table 1 gives a summary of the most important parameters of the ISKRA types.

Input is accomplished basically with a keyboard. For inputting commands there is a variously dimensioned function keyboard. A special input for commands is supplementarily provided in the case of the ISKRA 122. The ISKRA 123 has limited programmability. It stores a program of up to 71 commands which are to be input using the function

keyboard. The ISKRA 125 is completely programmable and also has comparison and jump operations. It has a special programming language. Program input can also be accomplished using magnetic cards or cassette magnetic tape. It is the basic model for a series of programmable desk-top calculators which differ from each other by various interchangeable microprograms. For ISKRA types 110-123 output is accomplished with digital display tubes. Only in the ISKRA 125 is a beam deflection tube used for display. The ISKRA 122 has a supplementary output channel and with the ISKRA 125 it is possible to connect a printer or to output onto cassette magnetic tape.

The operation times for addition and subtraction are between 0.02 and 0.05 s and for multiplication and division between 0.15 and 0.35 s.

The most important functions which are realized in individual types through permanent wiring are shown in Table 2.

From: Electronic desk-top calculators from the USSR.
Organization 8 (1974) 8, pg. 47-49.

Table 1. Parameters of ISKRA calculators.

ISKRA	110	111	112	121	122 123	125
(1) Wortlänge in Dezimalstellen	8	12	12	16	16	12
(2) Festkomma nach n Stellen; n	0; 2; 4; 6	0; 1; 2; 3; 6; 10	(3) 0 bis 12 nicht vorhanden	0 bis 16 nicht vorhanden	0 bis 16 nicht vorhanden	0 bis 12 vorhanden
(4) Gleitkomma	(5) nicht vorhanden	nicht vorhanden	3	3	3	bis 100
(6) Operandenspeicher	3	1	1	2	5	3
(7) Konstantenspeicher	3	1	1	2	3	3
(8) Zwischenwertspeicher	3,5	7	8	15	15	25
(9) Masse [kg]	3,5	7	8	15	15	25
(10) Abmessung [mm ³]	260 × 280 × 110	365 × 305 × 120	365 × 305 × 120	405 × 385 × 127	405 × 385 × 127	(11) etwa 0,06 m ³

KEY: (1) Word length in decimal places; (2) Fixed decimal after n places; (3) to; (4) Floating decimal; (5) Not present; (6) Operand storage; (7) Constant storage; (8) Intermediate value storage; (9) Weight (kg); (10) Dimensions (mm³); (11) Approximately.

Table 2. Functions of ISKRA calculators. ((KEY: 1)

Addition/subtraction; 2) Multiplication/division; 3) Reciprocal division; 4) Percent calculation; 5) Operations with constants; 6) summation in storage; 7) Raising to powers; 8) Extraction of roots; 9) Automatic rounding; 10) Operations with brackets; 11) Sign change; 12) Trigonometric functions; 13) Hyperbolic functions; 14) Natural logarithms; 15) Conversion of degree measure into arc measure; 16) Comparison; 17) Conditional operations; 18) With any exponents.))

ISKRA	110	111	112	121	122	123	125
(1) Addition/Subtraktion	x	x	x	x	x	x	x
(2) Multiplikation/Division	x	x	x	x	x	x	x
(3) Kehrwertdivision		x	x	x	x	x	x
(4) Prozentrechnung		x	x				
(5) Operationen mit Konstanten	x	x	x	x	x	x	
(6) Summierung im Speicher		x	x	x	x	x	x
(7) Potenzieren				x	x	x	x ¹⁾
(8) Radizieren				x	x	x	x
(9) automatisches Runden					x	x	
(10) Operationen mit Klammern					x	x	
(11) Zeichenverschiebung						x	
(12) trigonometrische Funktionen							x
(13) hyperbolische Funktionen							x
(14) natürlicher Logarithmus							x
(15) Umrechnung Grad- in Bogenmaß							x
(16) Vergleichen							x
(17) bedingte Operationen							x
(18) ¹⁾ mit beliebigem Exponenten							

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